# Nova Scotia Energy Research and Development Forum 2012

# Jeff Dahn

## Biography

Jeff Dahn is recognized worldwide as one of the pioneering developers of the lithium-ion battery that is now used worldwide in laptop computers, cell-phones and electrified vehicles. He has worked on new electrode materials, improved safety and most recently on improved lifetime for Li-ion batteries. He has been awarded both major awards by the Battery Division of the Electrochemical Society: the "Research Award" in 1996 and the "Technology Award" in 2011. He is a co-author of over 485 refereed journal papers and a co-inventor of 58 inventions with patents issued or filed.
Dahn is one of Canada's leading materials researchers, as evidenced by a No. 6 world-wide ranking for impact in the area of Materials Science by the Institute for Scientific Information (ISI) between 1995 and 1999. Dahn is one of only eleven Canadians in the fields of Materials Science or Physics today to be listed as a highly cited researcher by ISI.

Jeff Dahn obtained his BSc in Physics from Dalhousie University (1978) and his PhD from the University of British Columbia in 1982. Dahn then worked at the National Research Council of Canada (82-85) and at Moli Energy Limited (85-90) before taking up a faculty position in the Physics Department at Simon Fraser University in 1990. He returned to Dalhousie University in 1996. Jeff Dahn has always interacted strongly with industry. During his years at Simon Fraser University (90-96) he collaborated with the R+D team at NEC/Moli Energy Canada (Now E-One/Moli Energy Canada). The success of this collaboration led, in part, to the appointment of Dr. Dahn as the NSERC/3M Canada Industrial Research Chair in Materials for Advanced Batteries at Dalhousie University in 1996. Dahn was elected a Fellow of the Royal Society of Canada in 2001 and was appointed as a Canada Research Chair in 2003. Dahn now interacts with 3M's programs in battery materials, fuel cell materials and respirator carbons.

## Presentation Abstract: Advances in Lithium Ion Batteries

Lithium-ion batteries are presently produced at a rate of about 5 billion units per year for portable electronics applications. Lithium-ion batteries for electric vehicle and grid energy storage applications have more demanding requirements than those for portable electronics: they must have longer cycle life, longer calendar life, and lower cost per unit of stored energy. I will discuss how lifetime improvements and cost reductions are possible.